Crown of the Continent Research Learning Center
Roundtable May 28, 2003

Scientific Research – Systems level issues, questions, and needs

Knowing and communicating context is crucial:
Park → Network → Region (Crown of Cont.) → Global
To understand the park you must understand where it fits into the larger system

Priority 1 - Tools for synthesis: help move information into knowledge and knowledge into wisdom

The following were highlighted as most important roles the CCLC could play

- Facilitate better communication across all sectors (science, management, education)
- Identify types of issues that science can best contribute to
- Identify the role of science / relationship between managers and science, and the public and science
- Web presence – clearing house with vital links to up-to-date information on issues that require quick response (e.g. fire, flood)
- Accessible format – science must be accurate AND understandable
- Need access to past research that's occurred in the park (library, Natural Resource Bibliography)
- Need distillation and synthesis of results; must be accomplished by credible sources (i.e. people with scientific background and knowledge)

Priority 2 – Identify and articulate the key principles for response trajectories: requires stakeholder engagement

Communicating state-of-the-art knowledge about our current environmental context to management and public is vital in order for informed decisions to be possible

- What path are we on and how fast?
- What will drive future changes?
- Where do we want to go? Values! Need to know what to do with the knowledge, once it's been communicated
- Identify how socioeconomic / cultural resource needs interact with natural resource needs
- What is the role of people and choice in changing a trajectory?

Priority 3 = the following three research areas should be encouraged in and around GNP and the CCE

1. Studies that identify appropriate baselines and ranges in natural variations against which we measure both rates and magnitudes of impact and change in the system.

   The following types of studies provide the necessary context for impact and change assessment
   - Environmental monitoring
   - Ecological inventories
   - Ecosystem modeling
   - Paleoclimate studies
   - Archeological studies

2. Understanding disturbance (natural and anthropogenic) – Critical for supporting management goals

   Key questions
   - Is the level of disturbance increasing? (note, this requires some level of knowledge about context)
   - How resilient is the system to natural disturbance?
   - How resilient is the system to human disturbance?

   Specific issues to address
   - Avalanche
   - Fire
   - Insects
   - Climatic pulses
   - Exotics
   - Recreational effects on natural systems

3. Connectivity – landscape change has occurred throughout the country; how does this affect protected environments?

   Questions
   - How do changes in one part of the system affect the other?
   - How do changes outside the region affect the CCE?

   Key issues
   - Biodiversity
   - Landscape fragmentation

   Multidisciplinary, ecosystem level studies are required to address these issues and include:
   - Analyses at multiple spatial scales – need for regional, ecosystem level studies and models
   - Coupling – (atmosphere – land; terrestrial – aquatic) – “nested” models